

Attorney Docket No. 42390P10075

REMARKS

The title has been objected to as not being descriptive. Although the Office Action did not specify in what manner the title was non-descriptive, Applicant has amended the title in a manner that Applicant believes will overcome the objection. If the amendment to the title does not overcome the objection, the Examiner is requested to specify in what manner the title is non-descriptive.

Although not objected to, the preamble of several dependent claims has been amended to provide antecedent agreement with the associated independent claims.

Claim 16 has been rejected under 35 USC 112(2) as being indefinite for an antecedent problem with the term "said substrate". Claim 16 has been amended accordingly. Withdrawal of the rejection under 35 USC 112(2) is respectfully requested.

Claims 1-3 and 6-14 have been rejected under 35 USC 102(e) as being anticipated by U.S. patent no. 6,084,295 ("Horiuchi").

Claims 4 and 5 have been rejected under 35 USC 103(a) as being unpatentable over Horiuchi.

Claims 15-18 have been rejected under 35 USC 103(a) as being unpatentable over Horiuchi in view of U.S. patent 5,422,435 ("Takiar").

Applicants respectfully traverse these rejections because the cited references do not disclose or suggest every element of any claim, as the following analysis shows.

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Claims 1 and 15 recite that the insulation has a thickness of between approximately .2 micrometers and approximately .6 micrometers. This limitation has been moved into claim 1 from claim 4, which has been cancelled as redundant. The Office action admits that Horiuchi does not teach this limitation, teaching instead a thickness about a full order of magnitude greater than the claimed thickness, but then states the thickness of the insulation is an obvious design choice. Applicant strongly disagrees with this statement. A small difference in thickness might be a design choice, but the thickness disclosed by Horiuchi is 8 to 25 times greater than the claimed thickness. The thickness of an insulation on a tiny wire may be determined by numerous things, such as the thickness that is permitted by the technology used to apply the insulation. The technology used by Horiuchi obviously is not suitable for thicknesses less than about 5 micrometers. If it were, Horiuchi would not waste material and limit the spacing permitted between wires by applying such a thick insulation to the wires. Applicant maintains that an insulation thickness that is only 4 – 12 percent of the disclosed insulation thickness is not obvious. If the Examiner continues to reject this limitation, Applicant respectfully requests the Examiner to provide a reference showing a thickness in the disclosed range. Claims 2-3 and 5-7 depend from claim 1, while claims 16-18 depend from claim 15, and therefore include this same limitation not disclosed or suggested by Horiuchi.

Claim 8 recites a wire that has been bonded to a bond pad with ultrasonic bonding without first removing any of the insulation from the wire. Support for this limitation may be found in paragraph 0020 of the specification. None of the cited references disclose or suggest a bonding connection formed in this manner. Claims 9-10 depend

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from claim 8 and therefore contain the same limitation not disclosed or suggested by the cited references.

Claim 11 recites a polymer insulation around the wire. This limitation has been moved into claim 11 from claim 14, which has been cancelled as redundant. The Office action states that this limitation may be found in Horiuchi at column 4 lines 26-37. However, the cited portion of Horiuchi talks about epoxy, not polymers. The two terms are not synonymous. Claims 12 and 14 depend from claim 11 and therefore contain the same limitation not disclosed or suggested by Horiuchi.

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CONCLUSION

For the foregoing reasons, Applicant submits that claims 1-3, 5-12, 14-18 are now in condition for allowance, and indication of allowance by the Examiner is respectfully requested. If the Examiner has any questions concerning this application, he or she is requested to telephone the undersigned at the telephone number shown below as soon as possible. No fee is believed due in connection with this response. If this is incorrect, please charge any insufficiency or credit any overpayment to Deposit Account No. 02-2666.

Respectfully submitted,

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AUG 29 2002

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APPENDIX A**Marked-up version of amended claims**

1. (Amended once) An apparatus comprising:

a bond wire;

an insulating material coating said bond wire, the insulating material having a thickness in the range of approximately 0.2 micrometers to approximately 0.6 micrometers; and

a first end of said bond wire connected to a bond pad.

2. (Amended twice) The apparatus [insulated bond wire] of claim 1 wherein said bond wire material is selected from a group consisting of gold, silver, aluminum, and copper.

4. (Cancelled)

5. (Amended once) The apparatus [insulated bond wire] of claim 1 wherein said bond wire is connected to said bond pad through an ultrasonic bond.

6. (Amended once) The apparatus [insulated bond wire] of claim 1 further comprising said bond pad connected to an integrated circuit.

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7. (Amended once) The apparatus [insulated bond wire] of claim 1 further comprising said bond pad connected to a substrate.

8. (Amended twice) An integrated circuit comprising:

a first bond wire;

an insulating material coating said first bond wire;

a first end of said first bond wire connected to a bond pad by ultrasonic bonding without previously removing the insulating material from the first end; and

a second bond wire crossing said first bond wire.

9. (Amended once) The integrated circuit [pair of bond wires] of claim 8 further comprising an insulating material coating said second bond wire.

11. (Amended once) An integrated circuit assembly comprising:

an integrated circuit;

a substrate;

a bond wire connected to said integrated circuit and said substrate; and

[an] a polymer insulating material coating said bond wire.

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13. (Cancelled)

15. (Amended once) An integrated circuit assembly comprising:

a first integrated circuit;

a second integrated circuit;

a bond wire connected to said first integrated circuit and said second integrated circuit; and

an insulating material coating said bond wire to a thickness of between about .2 micrometers and about .6 micrometers.

16. (Amended twice) The integrated circuit assembly of claim 15 whercin said [substrate] second integrated circuit is selected from a group consisting of printable circuit boards, aluminum lead frames, and fine pitch ball grid arrays.

19-27. (Cancelled)